

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Seroprevalence of COVID-19 IgG Antibodies among Health Care Workers of Pakistan; A cross sectional study assessing exposure to COVID-19 and identification of high-risk subgroups
<b>AUTHORS</b>	Batool, Hijab; Chughtai, Omar; Khan, Muhammad; Chughtai, Akhtar; Ashraf, Shakeel; Khan, Muhammad

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Nicola Magnavita Università Cattolica Sacro Cuore, Public Health
<b>REVIEW RETURNED</b>	08-Nov-2020

<b>GENERAL COMMENTS</b>	<p>An investigation of seroprevalence of antibodies for Covid-19 in Pakistan. The study is useful because it allows you to assess the spread of infection in a region.</p> <p>According to the most recent indications of the WHO, the main limitation of the serological test is the ability to confirm or not an ongoing infection due to (antibody response time dependent, poor positive predictive value of tests) nor in the early stages of the disease. For this, in case of positivity, a molecular test on a swab is required for confirmation. Therefore, the strategy for using the serological test in community context is being evaluated.</p> <p>In the Introduction there are some statements unsupported by literature.</p> <p>Page 1: "Determining the rate of seropositivity is important as majority of the SARS-CoV-2 infected cases remain asymptomatic.[7]" it should be noted that this research has epidemiological value, because it testifies to the infection in people who do not know they have been infected, but only rarely does it allow to diagnose a case in progress and that the state of infectivity is demonstrated only by the molecular test on swab.</p> <p>Page 1: "A reasonable degree of immunity is expected among the survivors of COVID-19.[8]". The cited reference gives no data on immunity. Please cite some research that supports this statement.</p> <p>Page 1: "According to one estimate, herd immunity can be ensured if around 60% to 80% of the population develops immunity against SARS-CoV-2". Please add reference.</p> <p>Page 1: "RT-PCR is used for COVID-19 diagnosis but the diagnostic tests cannot be employed to assess seroprevalence." How could an antigen search indicate antibodies? The statement is tautological, reformulate or remove this sentence.</p>
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<b>REVIEWER</b>	Albert Nienhaus University Clinics Hamburg Eppendorf, Institute for Health Service Research in Dermatology and Nursing and German Social Accident Insurance Institution for the Health and Welfare Service, Department of Occupational Health Research
<b>REVIEW RETURNED</b>	20-Nov-2020

<b>GENERAL COMMENTS</b>	<p>The authors assessed the prevalence of SARS-CoV-2 infections in health workers (HW) in Pakistan.</p> <p>The topic is interesting, the study well done and the manuscript well written. However, it might be improved.</p> <p>1 A little more detail on how the HWs were recruited, would be helpful. Is there a register of HW in Pakistan and the HW were selected randomly from the register or how can I imagine this was done.</p> <p>2 Who was taking the blood samples? Was there a study group going to places or were the local occupational health nurses involved? Please describe.</p> <p>3 Why were HW with symptoms excluded? For infection protection reasons? Please explain. In addition, please mention in the discussion which effect this might have had.</p> <p>4 Table 2 should be improved: give row percent. For profession give Odds Ratio with the largest group being the reference group (doctors). In SPSS, the variable should be taken into the regression model as categorical. The same could be done for the variable place of duty. For living arrangement, the OR is missing. I assume that the reference group for the OR is the first mentioned group. However, for reported COVID-19 symptoms this is not so. Am I correct? Please clarify by a footnote</p> <p>5 The protective effect of N95 masks is very small OR 0.902 and not existing for surgical masks. This is surprising. Please discuss why this might be so. For example being existent does not mean that they are used or that enough PPE is available.</p> <p>6 minor: Page 9 line 12 ... to know the extent of infection (the instead of to?)</p> <p>Good luck with the revision</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Comments to the Author

Page 1: “Determining the rate of seropositivity is important as majority of the SARS-CoV-2 infected cases remain asymptomatic.[7]” it should be noted that this research has epidemiological value, because it testifies to the infection in people who do not know they have been infected, but only rarely does it allow to diagnose a case in progress and that the state of infectivity is demonstrated only by the molecular test on swab.

**Action Taken:**

Statement modified

Page 1: “A reasonable degree of immunity is expected among the survivors of COVID-19.[8]”. The cited reference gives no data on immunity. Please cite some research that supports this statement.

**Action Taken:**

Reference added

Page 1: “According to one estimate, herd immunity can be ensured if around 60% to 80% of the population develops immunity against SARS-CoV-2”. Please add reference.

**Action Taken:**

Reference added

Page 1: "RT-PCR is used for COVID-19 diagnosis but the diagnostic tests cannot be employed to assess seroprevalence." How could an antigen search indicate antibodies? The statement is tautological, reformulate or remove this sentence.

**Action Taken:**

Reformulated

Reviewer: 2

1 A little more detail on how the HWs were recruited, would be helpful. Is there a register of HW in Pakistan and the HW were selected randomly from the register or how can I imagine this was done

**Action Taken:**

Detail added

2 Who was taking the blood samples? Was there a study group going to places or were the local occupational health nurses involved? Please describe.

**Action Taken:**

Detail added

3 Why were HW with symptoms excluded? For infection protection reasons? Please explain. In addition, please mention in the discussion which effect this might have had.

**Action Taken:**

Explanation added

4 Table 2 should be improved: give row percent. For profession give Odds Ratio with the largest group being the reference group (doctors). In SPSS, the variable should be taken into the regression model as categorical. The same could be done for the variable place of duty. For living arrangement, the OR is missing. I assume that the reference group for the OR is the first mentioned group. However, for reported COVID-19 symptoms this is not so. Am I correct? Please clarify by a footnote

**Action Taken:**

Table modified. Please find attached the file "Tables HCW" clean and marked copies

5 The protective effect of N95 masks is very small OR 0.902 and not existing for surgical masks. This is surprising. Please discuss why this might be so. For example being existent does not mean that they are used or that enough PPE is available.

**Action Taken:**

Detail added

6 minor: Page 9 line 12 ... to know the extent of infection (the instead of to?)

**Action Taken:**

Line reformulated